#### **MEETING NOTICE**

Governor's Task Force on Global Warming
Carbon Tax/Cap and Trade Work Group
Date: Wednesday, September 19, 2007, 9:00 a.m. to 12:00 noon
Location: Pyle Center (UW-Madison Campus)
Room 325 and 326
702 Langdon Street, Madison, Wisconsin

#### **AGENDA**

- 1) Welcome/Housekeeping announcements
- 2) Presentation: Jim Turnure, Xcel Energy: Allocation
- 3) Discussion on policy assignment progress
- 4) Presentation: Chicago Climate Exchange members
- 5) Public comment
- 6) Adjourn

#### This meeting is open to the public.

If you have any questions or need special accommodations, please contact Lisa Stefanik at the Public Service Commission of Wisconsin by telephone at (608) 266-1125 or via e-mail at lisa.stefanik@psc.state.wi.us.

## Greenhouse Gas Allowance Allocations

Jim Turnure, Xcel Energy Environmental Policy

Wisconsin Governor's Task Force on Climate Change September 19, 2007

### Outline

- Definition of allowances
- Allowance creation, tracking and use
- Allowance allocation mechanisms
  - Allocation to entities
  - Allocation by auction
  - Allocation set-asides
- Allowance value: efficiency and equity
- Uncertainty, risk and timing

### Allowance Definition

- An allowance is a right to emit, defined by:
  - Substance (chemical or process-based)
  - Units (volume, weight, other unit)
  - Quantity (one vs. 1000 per allowance)
  - Expiration (annual, 3- or 5- year, perpetual)
  - Ownership (tradable vs. source-specific)

### Creation, Tracking and Use

- Allowances usually accompany regulatory limits on emissions, thus defining and limiting new property rights
- Creation of emission allowances is an inherently governmental power
- Tracking systems, along with emissions monitors and penalty provisions, are key enforcement mechanisms
- Use of allowances creates emissions; retirement prevents emissions; sale transfers ultimate decision on use vs. retirement but generally leads to use

## Allowance Allocation Mechanisms

- Initial allocation of allowances, in theory, is entirely independent of the final set of allowance holders and users
- Allowances must make their way to emitting entities/sources either through initial allocation or purchase
- Price signals and incentives will still be set by the cost of the 'last (marginal) ton'

# Allocation to Entities ('Direct Allocation')

- Allowances can be distributed directly to entities, generally affected (emitting) entities
- Allocations can be based on historic emissions, emissions intensity, size, etc.
- Allocations can be set in law (Acid Rain Act) or by regulators (ozone NO<sub>X</sub>)
- Viewed as most political method--debatable

### Allocation by Auction

- Allowances can be held by the government and auctioned to all or a limited set of bidders
- Rarely seen in practice: FCC spectrum auction, transmission rights in some electric power markets, 'residual allowance' auction in Acid Rain Program
- GHG allowance auction would be orders of magnitude larger
- Auction revenue flows to government; revenue recycling, redistribution, raiding, and/or restitution

### Allowance Set-Asides

- As a newly minted tradable property right, allowances can be used as cash substitute
- Government can create 'set-asides' or 'carve-outs' that allocate allowances to non-covered, non-emitting entities
- Common proposals are for new entrants, early actors, renewable energy, low income consumers and labor transition support (miners etc.)

# Allowance Value, Efficiency and Equity

- Again, in theory the compliance cost sets the price of GHG emission reductions, not the allowance allocation; thus there should be no efficiency impact on the production cost side of the ledger from allocation
- Emissions impacts and costs from allowances and optimal GHG tax should also be the same, but allowance trading lets the market find the 'correct' GHG value
- Auctions, like GHG taxes, create revenue that could be used to offset other taxes and increase economic growth, possibly making the GHG program much less costly for the overall economy; could be very difficult for states

# Allowance Value, Efficiency and Equity (II)

- Auctioning of allowances is equivalent to a GHG tax for emitting entities (industry)
- Allocation to upstream fuels is similar
- Allocation of allowances to emitters can lead to 'windfalls' under certain circumstances:
  - Costs of allowances can be passed to consumers
  - Baseline (non-additional) emission reductions occur that are not recognized by the GHG regulatory system
  - Allowances that are freed up by such reductions are sold and included in retained earnings
- Highly unlikely outcome for regulated utilities;
   more likely for fossil fuel producers

### Uncertainty, Risk, and Timing

- Allowance allocation is the most important decision for many, other than the need for and stringency of a GHG limit
- Uncertainty over allocation can 'freeze' policy process
- State vs. federal allocation policies can create additional uncertainty
- Planning for compliance requires long lead times
- Need to resolve major issues to move forward with effective program

### Chicago Climate Exchange, Inc.



State of Wisconsin September 19, 2007

Michael Walsh, Ph.D., Executive Vice-President 312-554-3350



### What is Chicago Climate Exchange?

A premier and unique financial institution designed to advance business, environmental and social goals.

Chicago Climate Exchange (CCX®) is the world's first and North America's only active voluntary, legally binding integrated trading system to reduce emissions of all six greenhouse gases, with offset projects in North America and worldwide



### **CCX: Unique Global Platform**

- Chicago Climate Exchange ™ (CCX)
- Launched 2003 with 14 members, now 325+ members (US, CA, MX, BR, NZ, AU, CH)
- European Climate Exchange ™ (ECX)
- FSA-regulated futures market for European CO<sub>2</sub> Allowances
- Launched April, 2005 accounts for 80-90% of total exchange traded volume in the EU ETS
- Chicago Climate Futures Exchange <sup>™</sup> (CCFE)
- CFTC-regulated futures exchange for U.S. SO<sub>2</sub> and NOx allowances, UNFCCC CERs
- Launched in December 2004, world's first environmental derivatives exchange
- Montreal Climate Exchange ™ (MCeX)
- Joint venture with the Montreal Bourse
- To host Canadian GHG trading, other environmental markets
- New York Climate Exchange<sup>™</sup> and Northeast Climate Exchange<sup>™</sup>
- Developing financial instruments for northeast Regional Greenhouse Gas Initiative (RGGI)
- California Climate Exchange™
- Developing financial instruments relevant to the California Global Warming Solutions Act, AB32
- India Climate Exchange™
- (In development)



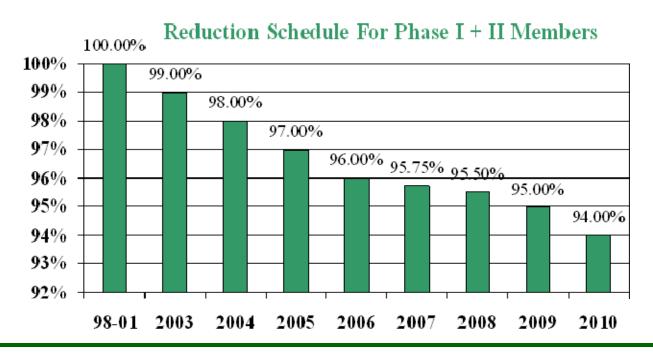
### CCX Market Architecture (2003-2010)

<u>Phase I:</u> Members made legally binding commitments to reduce or trade 1% per year from 2003-2006, for a total of 4% below baseline.

Phase II: Members make a legally binding commitment to reduce to 6% below baseline by 2010.

Baseline = Avg. emissions from 1998-2001, emissions in 2000 (Phase II)

CCX is synergistic with and complementary to all emerging policy, precludes none - whether state, regional, national, voluntary or mandatory, including Midwestern state registry.





### **CCX Membership** (Over 300 - All Sectors)

#### **CCX Members:**

Have significant direct emissions and make a voluntary but legally binding commitment to meet annual greenhouse gas (GHG) emission reduction targets for direct GHG emissions subject to audit by NASD.

<b>Agricu</b>	<u>lture</u>
Cargill	Inc.

**Aerospace and Equipment** 

Rolls-Rovce **Automotive** 

Ford Motor Company **Beverage Manufacturing** 

New Belgium Brewing Company

Chemicals Dow Corning

**DuPont** 

Rhodia Energy Brasil Ltda **Diversified Manufacturing** 

**Bayer Corporation** Eastman Kodak Interface, Inc. Ozinga Bros

**United Technologies Corporation** 

**Electric Power Generation** 

Australian Gas & Light (AGL) American Electric Power American Municipal Power Assoc. Electric Co-op Inc. (AECI)

Central Vermont Public Service

DTE Energy

**Duquesne Light Company** 

**Electric Power Generation (Cont)** 

Green Mountain Power Manitoba Hydro **NRG** Power

Puget Sound Energy TECO Energy, Inc.

**Electronics** Motorola, Inc. Sony Electronics

Square D/Schneider Electric N.A.

**Environmental Services** 

**Atlantic County Utilities Authority** Lancaster County Solid Waste Authority Wasatch Integrated Waste Management DistricCity of Aspen

Waste Management, Inc.

**Food Processing** 

Premium Standard Farms

Smithfield Foods **Forest Products** Abitibi-Consolidated Aracruz Celulose S.A. Cenibra Nipo Brasiliera S.A.

International Paper

Klabin S.A. MeadWestvaco Corp.

Neenah Paper

**Forest Products** 

Stora Enso North America Suzano Papel E Celulose SA

Temple Inland

**Furniture and Design** 

Knoll Steelcase

**Information Technology** 

**IBM** Intel

States, Counties, Cities

State of Illinois State of New Mexico

City of Berkeley City of Boulder City of Chicago

City of Melbourne, AU

City of Oakland City of Portland

Sacramento County, CA

King County, WA Miami-Dade County, FLA

**Pharmaceuticals** Baxter Healthcare **Private University** 

Hadlow College **Tufts University** 

**Public Universities** 

Michigan State

The University of Idaho The University of Iowa The University of Minnesota

The University of Oklahoma

Recreation

Aspen Skiing Company

Retail Safeway Inc. **Petrochemicals** 

Petroflex Indústria e Comércio SA

**Semiconductors** 

Freescale Semiconductor

Intel Corp.

ST Microelectronics

Steel

Roanoke Electric Steel Corp.

**Transportation** 

Amtrak

San Joaquin Regional Rail

CCX

Commission

5

## CCX Membership (Associate Members)

#### CCX Associate Members:

- Have negligible direct emissions, but generate indirect emissions through electricity use and business travel.
- Commit to offset 100% of annual indirect emissions, subject to audit by NASD, through 2010.
- CCX Associate Members are office-based organizations such as professional firms, research & science centers and nongovernmental organizations.

<b>Architecture</b>	/Planning
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Mithun, Inc.

**Associations** 

Confederation of British Industry

**Brokerage Services** 

Amerex Power

Consulting

Domani LLC

Global Change Associates

Natural Capitalism, Inc.

RenewSource Development, LP

Rocky Mountain Institute

**Documentary Production** 

Cloverland Inc.

**Energy and Management** 

**Services** 

Orion Energy Systems Ltd Sieben Energy Associates

Thermal Energy International

**Engineering** 

Rumsey Engineers Inc.

Vanasse Hangen Brustlin, Inc.

**Financial Services** 

Access Industries, Inc.

MB Investments, LLC

**Financing Agency** 

Ohio Air Quality Dev. Authority

**Food Services** 

Lobster.com

**Green Power Marketer** 

Green Mountain Energy

**Information Technology** 

Open Finance LLC

Intercontinental Exchange

**Legal Services** 

Foley & Lardner

Sullivan & Cromwell Levenfeld Pearlstein

**Non-Governmental Organization** 

American Coal Ash Association
American Council Renewable Energy

Delta Institute

Houston Advanced Research Center

Midwest Energy Efficiency Alliance

World Resources Institute

**Printing** 

The Big Print
Private College

Presidio World College

Real Estate Prologis

Risk Management

Professional Risk Managers' Assoc.

**Religious Organization** 

Jesuit Community of Santa Clara University

**Retiring/Offsets** 

Carbonfund.org

Terrapass

**Renewable Energy** 

Airtricity

American Renewable Energy

Reknewco Ltd.

Renewable Fuels Association

**Social Investment** 

Generation Investment

Management

KLD Research & Analytics

Pax World

**Technology** 

Millennium Cell

Polar Technology

**Trade Associations** 

Confederation of British

Industry

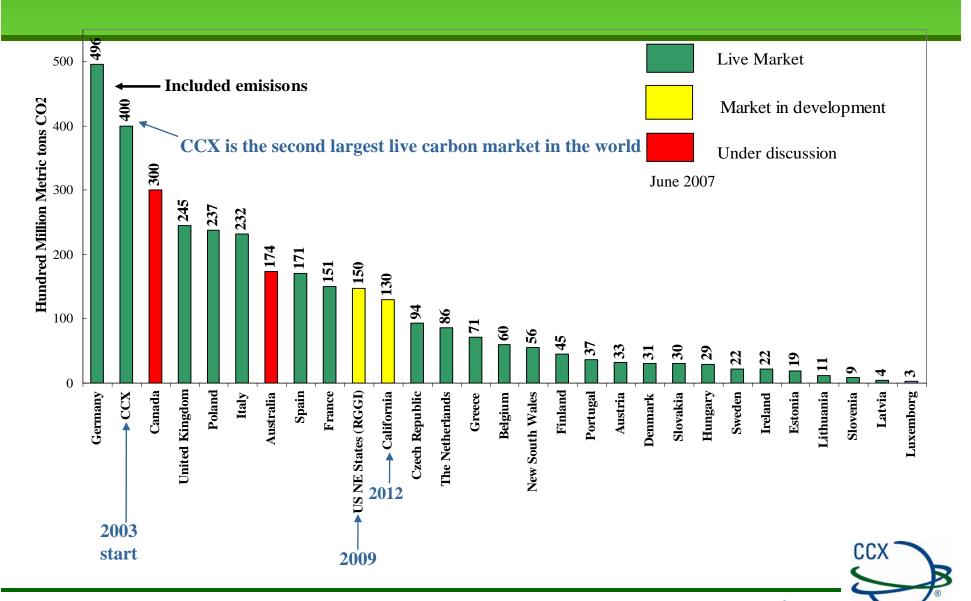
**Transportation** 

Valera Global



### Size of Live, Emerging, Possible GHG Markets

**June 2007** 



## CCX Membership (Participant Members)

- Offset Provider: Owner of an Offset Project that registers and sells Offsets on its own behalf.
- Offset Aggregator: Entity that serves as the administrative representative, on behalf of Offset Project owners, of multiple Offset-generating projects.
- <u>Liquidity Provider</u>: Entity or individual who trades on the Exchange for purposes other than complying with the CCX emissions reduction schedule, such as market makers and proprietary trading groups.

#### **Selected Offset Aggregators**

3 Phases Energy Services

Carbon Farmers

Cargill, Inc

CO2 Australia Limited

Delta Institute

**Econergy** 

**Ecosecurities** 

**Environmental Credit Carbon Pool** 

Environmental Credit Corp.

First Capitol Risk Management

Intrepid Technologies, Inc.

Iowa Farm Bureau

Kentucky Corn Growers Assoc.

National Carbon Offset Coalition

North Dakota Farmers Union

Rice Dairy LLC

Standard Carbon

Xi'an Zhongyang Electric Co.

#### **Selected Liquidity Providers**

Arreon Carbon

Amerex Energy

Black River Clean Energy

**Breakwater Trading** 

Calyon Financial, Inc.

Cargill Power Markets

**Evolution Markets** 

FCT Europe Ltd.

First New York Securities LLC.

Goldenberg, Hehmeyer & Co.

Haley Capital Management

JP Morgan Ventures Energy

Lehman Brother Commodity

Marquette Partners

Natsource LLC

Peregrine Financial Group

Rand Financial Services, Inc.

Shatkin Arbor, Inc.

Swiss Re Financial Products Corp.

Tradelink

#### **Selected Offset Providers**

Arreon Carbon UK Ltd.

Beijing Shenwu Thermal Energy

CO<sub>2</sub> Australia

Ecosecurities

**Energy Trading Co** 

Commonwealth Resource Management Corp.

Gallo Cattle Company

Hubei Sanhuan Development Corporation

Lugar Stock Farm

**Precious Woods Holdings** 

RCM International LLC

Sexton Energy LLC

Sustainable Forestry Management, Ltd.

Vessels Coal Gas Inc.

Weber County

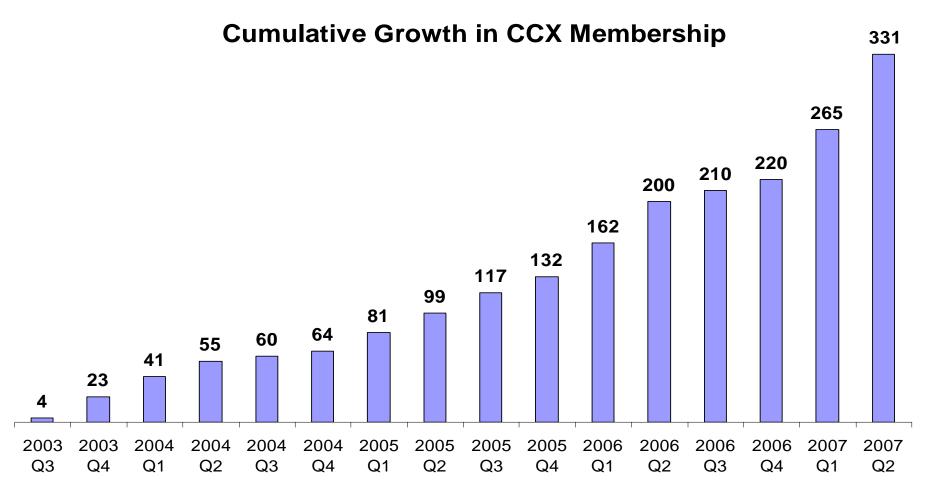


### **Instruments Traded in CCX**

- CCX Carbon Financial Instrument (CFI)
- "Allowances" pre-issued to emitters in declining blocks
- "Offsets" from eligible verified reduction projects
- Allowances and Offsets treated equally in annual compliance
- Cash Contract =100 tons (overnight delivery/settlement)



### **CCX Membership Growth**





### **CCX Members in Wisconsin**

#### Members

- Stora Enso
- Meister Cheese
- Stark Investments (also Liquidity Provider and shareholder)
- Liquidity Providers
  - SR Energy

#### **Associate Members**

- Orion Energy Systems
- Agricultural Offsets
  - Approx.140,000 metric tons to date from 6 participating farms
  - Conservation Tillage enrollment from 74 farms representing 17,000 acres awarded 19,900 metric tons to date and 9,000 metric tons annually

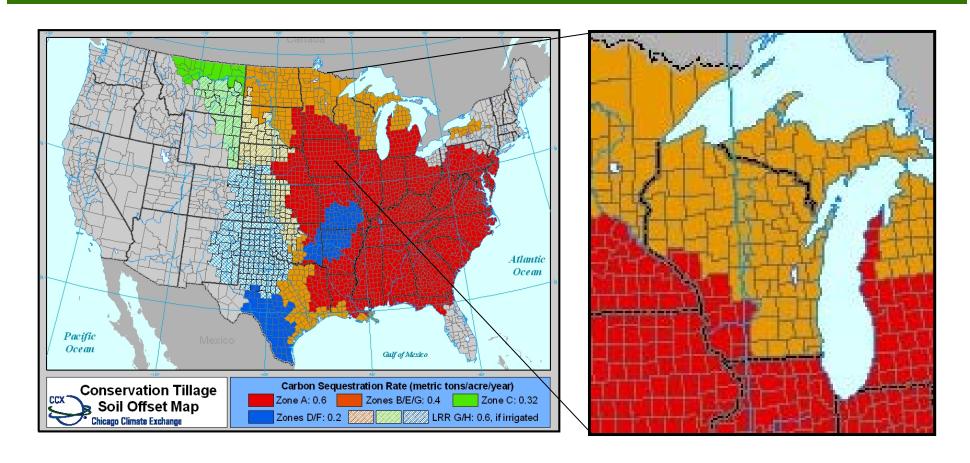


### **CCX State and Municipal Members**

- State of New Mexico
- State of Illinois
- City of Aspen, Colorado
- City of Chicago, Illinois--Founding Member
- City of Oakland, California
- City of Boulder, Colorado
- City of Berkeley, California
- City of Portland, Oregon
- Sacramento County, California
- King County, Washington
- Miami-Dade County, Florida



### **CCX Offset Potential in Wisconsin**



Entire State is eligible for conservation tillage offsets



### **CCX Offset Potential in Wisconsin** (Cont.)

#### Agricultural Methane

- Average Number of Cows Per Dairy Farm: 89 dairy cows
  - \*5 metric tons CO2e = approximate annual emissions per cow
  - 89 dairy cows \* 5 metric tons = 445 metric tons CCX carbon credits
  - 445 \* \$4.00 = \$1,780
- Number of Dairy Cows in Wisconsin: 1,248,000 dairy cows
  - 1,248,000 \* 5 metric tons \* \$3.00 = \$18,720,000

#### Forestry Carbon Potential to be determined

For example, 500,000 acres of forest are currently enrolled in USDA Conservation Reserve Program (CRP); this acreage could be "CCX" ready" now, subject to verification



### **CCX Global Linkages**





### Specific Relevance for Wisconsin

- Implementation platform for state commitments and plans (Wisconsin has stakeholder process and public reduction commitments; fully consistent with Midwest registry process)
- Cap-and-Trade now: CCX is only active opportunity to engage in and learn about reductions through tool of cap-and-trade
- Lead by example state government leads, others must follow
- One-stop implementation for "green government" focus efficiencies across all departments, good governance and best practices for public budget
- Acquire a "turn key" emissions management system state-of-art
- Master municipal emissions inventory data vital for any GHG goal
- Better link procurement practice to GHG policy weigh options spend wisely
- Revenue now for key state industries, especially dairy and forestry



### **Defining CCX Offsets: Principles**

#### Eligibility:

- -Predictability: facilitate carbon finance
- -Other than Business as Usual: beyond regulation, rare, recent
- -Verifiable: eligibility, quantities, ownership
- -No cherry picking emitters must take entity-wide reductions
- -Avoid perverse incentives: avoided encouraging bad acts

#### Target Actions with Major Mitigation Potential

- -Non-CO<sub>2</sub> gasses: low-cost, multi-benefit
- -Agriculture: soils hold 183 years of global CO2 emissions
- -Forestation: forests hold 75 years of global CO2 emissions
- -Advance broader societal goals: sustainable agriculture and forestry, energy efficiency, renewables

#### General provisions:

- -Conservative crediting
- -Reserve pools for sequestration assurance
- -All Carbon Financial Instruments are equivalent



### **CCX Emission Offset Types**

 Verified Offset projects sequester or eliminate GHGs to earn Carbon Financial Instruments (CFI) sold on CCX electronic platform to CCX membership

#### **Current pre-defined offset categories:**

- Landfill and agricultural methane destruction
- Carbon sequestration: reforestation, agricultural soils
- Renewable energy, fuel switching, energy efficiency
- Others in development
- Independent verification by authorized entities: SGS, DNV, First Environment, BvQi



Minnesota dairy farmer receives first check from sales of CCX Offsets for methane destruction (Approx. \$10k for 1 year)

### **CCX Verifiers: Leaders in their Field**

#### **Agricultural Methane Capture and Combustion**

Agri-Waste Technology, Inc.

SĔS Inc.

TUV SUD Industrie Service GmbH

#### **Forestry**

BVQi

Forecon Inc.

SGS -

TUV SUD Industrie Service GmbH Winrock International

#### **Agricultural Soil Carbon Sequestration**

Agri-Waste Technology, Inc Association of Illinois Soil and Water Conservation Districts North Dakota Association of Soil Conservation Districts SES Inc.

TUV SUD Industrie Service GmbH

#### **Energy Efficiency**

**Econergy Corporation International** Franklin Energy Services ICF Consulting Canada Inc. TUV SUD Industrie Service Gmbh

#### **Landfill Methane**

ARM Group Inc.

Det Norske Veritas (DNV)

**Econergy Corporation International** 

First Environment Inc.

Richardson Smith Gardner and Associates, Inc.

Kleinfelder

TUV SUD Industrie Service GmbH

WHEN YOU NEED TO BE SURE



SGS is a world leading inspection, verification, testing and certification company, and is recognized as a global benchmark for quality and integrity. With more than 48'000 employees, SGS operates a network of over 1'000 offices and laboratories around the world.



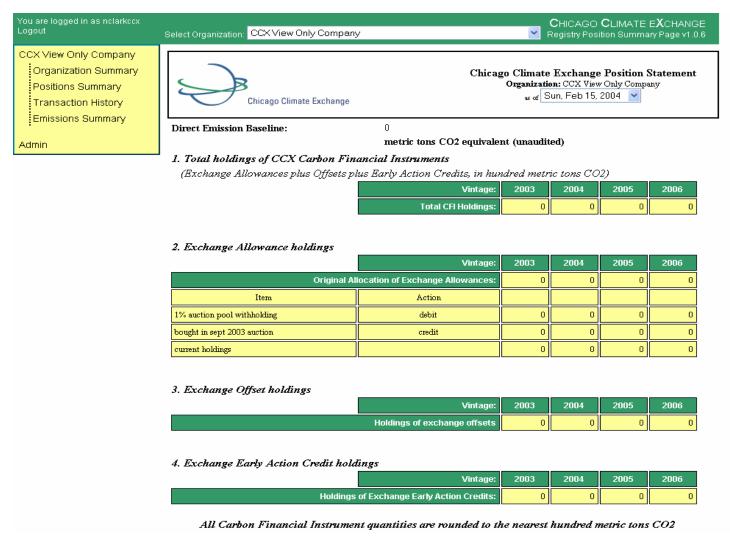
DNV is a leading independent greenhouse gas verifier operating globally. Their GHG experts are used by international organizations, governments, and industry, delivering independent, third party services for climate change activities.



### What Offset Projects "Count"? Project Eligibility Rules in CCX, other programs

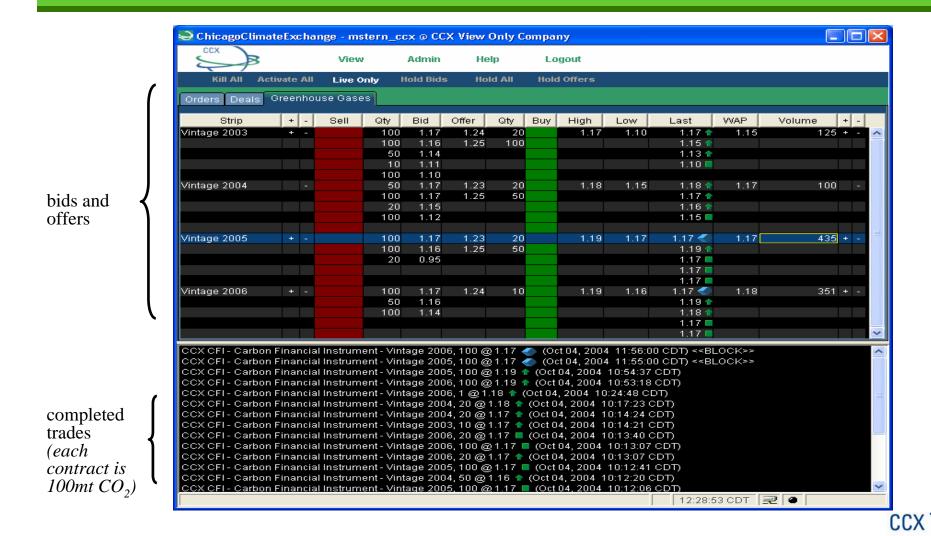
Project-based Crediting provision in CCX Rules	Initiative with essentially identical "additionality" rules	Major issue addressed identically: what projects are allowed to earn credits?
Landfill methane	Regional Greenhouse Gas Initiative	In both programs projects must be surplus to regulation and initiated no earlier than ~4 years prior to first compliance year
Agricultural soils	Pacific Northwest Direct Seed Association, U.S. Senate Bill 317	Early actors NOT denied participation
Forestation	Kyoto Protocol	Tree growth during market period for plantings done 1990 or later on sites unforested at end of 1989
Renewable Energy	Bonneville Environmental Foundation, Center for Resource Solutions	Wind, solar, other renewable energy facilities can get credit if activated 1999 or later, no double selling of green attributes

### **CCX** Registry





### **CCX Market Screen**



### **CCX Price and Volume History**

As of 6/30/07 (End of Q2)



### **Steps to CCX Membership for State** Governments

- Inventory and baseline Gather energy data for CCX baseline 1. period (1998-2001 Phase I or single year 2000 Phase II) for all state operations (state-owned fleets, buildings, landfills)
- Data Analysis with CCX CCX provides preliminary analysis and 2. GHG conversions
- 3. Weigh reduction trends planned relative to CCX reduction commitment
- Join CCX—Legally binding commitment 4.
- 5. Annually, True-up: Buy and/or sell and/or hold for future needs
- Learn: Participate in CCX governance committees (optional) 6.



## Membership Highlights 2006-2007

- Safeway Inc. joins CCX, first retailer, Sept. 06
- Goldman Sachs becomes investor in CCX (Holding company, Climate Exchange Plc) Sept. 06
- State of Illinois joins CCX, first Midwest state, Oct. 06
- City of Melbourne Australia (first city outside US) becomes first city outside U.S. to join, Dec. 06
- United Technologies joins CCX, leader in sector, top performing company, Dec. 06
- Eastman Kodak joins CCX, landmark US manufacturing brand, Jan. 07
- Sacramento County, CA joins CCX, Jan. 07
- Miami-Dade County, FLA joins CCX, June 2007
- Australia Gas & Light becomes first utility outside N. America to join CCX, Mar. 07
- Motorola becomes first Global Member of CCX, Jun. 07
- US House of Representatives announces plans to use CCX and purchase CFIs, in its "carbon neutral" initiative, June. 07
- Bank of America joins CCX, Jul. 07
- Carbon Financial Instrument Futures Contract Launch on CCFE, Aug. 07
- CER Futures Contract (Kyoto compliant) Launch on CCFE, Aug. 07



### **CCX and CCX Members Major Press**





#### Newsweek



#### It Can Pay to Be Green

Cleaner air means profits at the Climate Exchange.

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### Free Market, Cleaner Air





#### GWTF Carbon Group Meeting 9/19/07 Pyle Center

#### **Welcome / Announcements:**

None

#### Presentation by Jim Turnure, Xcel Energy: Allocation

• This presentation will be posted on the Carbon Group's web site.

#### **Conference call update**

- Our group may present policies on October 3 at the Overall Task Force meeting
- Next meetings for our group: 9/25 and 9/28

#### Work group check in

All group "leaders" indicate they are on track, but they are struggling most with quantifying of costs and greenhouse emissions reductions for their policies. The Capand-Trade group notes the most progress, and as such, they will present their policy first at the 9/25 meeting.

#### Presentation by Mike Walsh, Executive Vice President, Chicago Climate Exchange

• This presentation will be posted on the Carbon Group's web site.